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BULLETIN OF FOREIGN PLANT INTRODUCTIONS.

March 16 to 31, 1911.

NEW PLANT IMMIGRANTS.

(NOTE: Applications for material listed in this bulletin may be made at any time to this office. As they are received they are filed and when the material is ready for the use of experimenters it is sent to those on the list of applicants who can show that they are prepared to care for it, as well as to others selected because of their special fitness to experiment with the particular plants imported.)

AGAVE POTOSINA x SISALANA. (Amaryllidaceae.) 30189-190. Bulbils and seed from Algiers, Algeria. Presented by Dr. L. Trabut. "In a crossing of the great Agave of San Luis Potosi with Sisal I obtained forms very interesting as textiles. The plants being bulbiferous, it was very easy to fix the best variations obtained. The hybrids are very much more resistant to cold than the Sisal. The fibers are more brilliant, finer and more abundant." (Trabut.) For distribution later.

AMYGDALUS ARMENIACA. (Amygdalaceae.) 30463. Scions of an apricot from Tai Ming Fu, North China. Presented by Mr. Horace W. Houlding. "This apricot is called the 'Mammoth'." (Houlding.) For distribution later.

AMYGDALUS COMMUNIS. (Amygdalaceae.) 30314. Scions from Khotan, Chinese Turkestan. "An almond called 'Badam'; fruit small, hard-shelled, able to stand much drought, alkali and neglect." (Meyer's introduction.) For distribution later.

AMYGDALUS PERSICA. (Amygdalaceae.) 30319, 30324, 30333, 30337-340, 30357-358. Cuttings of peaches from Chinese Turkestan. Among these nine numbers are some unusually fine peaches, numbers 30357-358 from Kashgar being especially recommended by the British consul, Mr. Macartney. No. 30333 stands shipping well, but does not keep well. RIPENS IN OCTOBER. No. 30340 is said locally to KEEP FOR SEVERAL MONTHS. (Meyer's introductions.) For distribution later.

AMYGDALUS PERSICA. (Amygdalaceae.) 30325, 30332, 30334, 30335, 30336, 30341, 30359. Cuttings of nectarines from Chinese Turkestan. Among these numbers are some from an altitude of 5000 feet, large, late ripeners, and keeping and shipping well, and one, number 30359, recommended by the British consul, Mr. Macartney, is said to keep for several weeks after being fully ripe. (Meyer's introductions.) For distribution later.

ANONA SPP. (Anonaceae.) 30213-214. Seeds of anonas from Piracicaba, Brazil. Presented by Prof. Clinton D. Smith, Escola Agricola Pratica. 30213. "Seed from the best selected variety I could find." (Smith.) 30214. "Ata, a fruit that takes fully a year to mature." (Smith.) For distribution later.

ASPARAGUS SPP. (Convallariaceae.) 30217-221. Seeds of asparagus from La Mortola, Ventimiglia, Italy. Presented by Prof. Alwin Berger, curator of the garden. Five species introduced for the work of the Office of Truck-Crop Diseases in breeding a resistant asparagus and also various forms for florists' use. For distribution later.

ASPARAGUS AFRICANUS. (Convallariaceae.) 30300. Seed of the native asparagus from Cedara, Natal, South Africa. Presented by Mr. E. R. Sawer, director, Division of Agriculture. Introduced for the same purpose as the preceding. For distribution later.

CARAGANA SP. (Fabaceae.) 30153. Cuttings of a caragana from Pustan Terek, Chinese Turkestan, elevation 7000 feet. "A very low growing species of Caragana, very compact and very spiny, said to be covered with yellow flowers in early summer, which flowers are eaten by the Kirghis. Native name 'Karagan'. Recommended as an ornamental garden and park shrub in semi-arid regions and as a rockery shrub in moist localities." (Meyer's introduction.) For distribution later.

CHAYOTA EDULIS. (Cucurbitaceae.) 30462. Fruits of chayote from Algiers, Algeria. Presented dy Dr. L. Trabut. "Chayotte verte grosse(large green chayote.) This variety is very strong and fertile." (Trabut.) For distribution later. These are specimens of the strain annually exported from Algiers in such large quantities to the larger cities of Europe.

DIOSPYROS TESSELARIA. (Diospyraceae.) 30139. Seed of an ebony from Mauritius. Presented by Mr. G. Regnard. "These seeds are very difficult to procure. The tree is not widely scattered and does not occur except in the mountains of certain localities where the monkeys usually eat the fruits before their complete maturity." (H. Boname.) For distribution later.

ERAGROSTIS REPTANS. (Poaceae.) 30209. Seed of a grass from the plains of the island of Marajó, the great cattle country of the state of Pará, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de cultura experimental Paraense. "This is known as 'barba de bode' (goat's beard). The habitat of this Eragrostis is the clay soils of the lowlands where it is under water for half of the year or more. It is considered more nutritive and more savory than Paspalum conjugatum, (Plant Introduction No. 30208, which see)." (Fischer.) For distribution later.

EUCOMMIA ULMOIDES. (Trochodendraceae) 30137. Seeds of the Tu-Chung from China. Procured by Mr. E. H. Wilson, and purchased from Prof. C. S. Sargent, Arnold Arboretum, Jamaica Plain, Massachusetts. "A tree 25 to 40 feet high by 1½ to 4 feet in diameter, cultivated in western Hupeh and Szechuan, China, at altitudes between 1000 and 4500 feet. The tree is valued by the Chinese for its bark, which constitutes the important native drug, Tu-Chung. The bark, leaves and fruit contain silky, elastic fibres, composed largely of a caoutchouc-like substance akin to balata, which is deserving of a thorough investigation." (Wilson). These tough threads are visible on breaking the leaves or bark. The tree has proven hardy as far north as Boston, Mass. For distribution later.

FRAXINUS SP. (Oleaceae.) 30143. Cuttings from Yarkend, Chinese Turkestan. "An ash of peculiar growth found on an old graveyard where it never got any irrigation water. To be tested as an ornamental tree in those regions of the United States where the rainfall is slight and the summer temperatures high." (Meyer's introduction.) For distribution later.

JUGLANS REGIA. (Juglandaceae.) 30331. Scions from Khotan, Chinese Turkestan. "A walnut called 'Yang-ak'. A rather large variety, shells medium soft. Walnuts are grown in Chinese Turkestan at elevations from 4000 to 7000 feet, are able to stand a fair amount of drought and alkali and do not suffer from great extremes in temperature. There are large

regions in the southern Rocky Mountains where in all probability very profitable orchards could be established." (Meyer's introduction.) For distribution later.

MALUS SPP. (Malaceae.) 30309, 30326-328, 30353. Cuttings of apples from Chinese Turkestan. Among these are some with good keeping qualities, able to withstand considerable degrees of drought and alkali. (Meyer's introductions.) For distribution later.

MALUS SPP. (Malaceae.) 30350-253. Seeds of four species of Malus from Albano, Stockholm, Sweden. Presented by Dr. Veit Wittrock, Botanical Gardens. 30250. Malus medweitskyana. 30251. Malus prunifolia. 30252. Malus ringo. 30253. Malus sargenti. All for distribution later.

MANGIFERA INDICA. (Anacardiaceae.) 30211. Seeds of mango from Piracicaba, Brazil. Presented by Prof. Clinton D. Smith, Escola Agricola Pratica. "Seeds from a choice variety grown on the fazenda of Señor Grossi of Arraraquara, in this state. I have never eaten other mangos which approach them in excellence of flavor and absence of the turpentine odor and flavor." (Smith.) For distribution later.

MEDICAGO CILIARIS. (Fabaceae.) 30110-111. Seeds of alfalfa from Haifa, Palestine. Presented by Mr. Aaron Aaronsohn, Director, Jewish Agricultural Experiment Station. For distribution later.

MEDICAGO FALCATA. (Fabaceae.) 30433-436. Seeds of alfalfa from Kashmir and Chinese Turkestan. Procured from Mr. Rassul Galwan, Leh, Kashmir. For distribution later.

MEDICAGO FALCATA. (Fabaceae.) 30200. Seed of alfalfa collected in 1909 from specimens growing wild in Lower Austria. Presented by Mr. Weinzirl, Director of the Imperial Seed Control Station, Vienna. For distribution later.

MEDICAGO ROTATA. (Fabaceae.) 30097. From Haifa, Palestine. Presented by Mr. Aaron Aaronsohn, Director, Jewish Agricultural Experiment Station. Secured like the three preceding for the work of the Office of Forage Crop Investigations. For distribution later.

MORUS NIGRA. (Moraceae.) 30330. Scions of a mulberry from Khotan, Chinese Turkestan. "A mulberry called 'Shatoot'. Berries large, of dark violet-black color, ripening from early August until the end of September. Of very persistent habits, every berry having to be picked almost by hand. Taste fresh sub-acid. The trees are mostly grafted one meter above the ground so that the fruits may be easily gathered. Recommended as a home fruit in desert regions under irrigation." (Meyer's introduction.) For distribution later.

PASPALUM CONJUGATUM. (Poaceae.) 30208. Seeds of a grass from the plains of the island of Marajó, the great cattle country of the state of Pará, Brazil. Presented by Mr. Walter Fischer, acting director, Campo de Cultura Experimental Paraense. "Variety pubescens, here known as 'Capim de marreca',(duck grass); it is said to differ from the type in being annual; it prefers the clay soils of the lowlands where it is under water for half of the year or more, reproducing itself by seeds at the beginning of the summer when it makes a fine green pasture not over a foot in height, surviving the long drought in the hard baked clay soil." (Fischer.) For distribution later.

PERILLA OCYMOIDES. (Menthaceae.) 30298. Seeds from Utsunomiya, a city in the interior about eighty miles distant from Yokohama, Japan. Procured by Mr. E. G. Babbitt, American Vice Consul General in Charge, Yokohama. "Yegoma. It is from this that the perilla oil, commonly known as 'yeno-abura', or oil of yegoma, is obtained." (Babbitt.) For distribution later.

PITTOSPORUM MAYII. (Pittosporaceae.) 30216. Seeds from Castlewellan, County Down, Ireland. Presented by Mr. Thomas J. Ryan, head gardener for Earl of Annesley. "This variety has proven quite hardy. I have planted about 300 yards of a hedge of it, grown from seed saved from the Castlewellan plants, on an estate near the sea coast, and they are now about four feet high and make a fine ornamental hedge. The only trouble with all the Pittosporums is transplanting. We find it safest to grow them in pots plunged in the open ground, till they are finally placed out; this of course only applies to young stock. The variety Mayii grows freely and quickly from seed and is a good stock to work other sorts on if necessary." (Ryan.) For distribution later.

POPULUS SPP. (Salicaceae.) 30147-150. Cuttings of four species of poplar from Chinese Turkestan. Among them are a form of the Lombardy poplar, very free from galls and diseases, a poplar, the young branches of which have a particularly white bark, which makes it attractive in winter, and a resinous-budded tree with very variable leaves, recommended as a hardy ornamental for the colder and bleaker sections of the United States. (Meyer's introductions.) For distribution later.

PRUNUS ARMENIACA. See also AMYGDALUS ARMENIACA, under which name scions of S. P. I. No. 30463 were sent in.

PRUNUS ARMENIACA. (Amygdalaceae.) 30310-313, 30321, 30323, 30342-348, 30355. Cuttings of apricots from Chinese Turkestan. "The Turkestan varieties of apricots seem all to be able to stand a fair amount of alkali in the soil and are not hurt by great fluctuations in temperature." These forms nearly all have sweet kernels, replacing almonds in local consumption. No. 30312 is said to "stand apparently more cold, alkali, and neglect than any other variety of apricot." Another, No. 30355, from Khanaka, "RIPENS TOWARDS THE END OF AUGUST AT AN ELEVATION OF ABOUT 6000 FEET, WHERE IT IS SO COOL THAT MELONS, GRAPES AND PEACHES DO NOT RIPEN." These apricots are recommended to be given a thorough test especially in the western parts of the United States. Also to be tried in hybridization experiments with native plums, so as to create new strains of garden fruits, fit to stand severe cold. The wild apricots from Manchuria and northern Korea might be taken for stocks and native hardy plums might also be tested for this purpose. (Meyer's introductions.) For distribution later.

PRUNUS DOMESTICA. (Amygdalaceae.) 30315, 30320, 30322, 30349-350, 30356. Cuttings of plums and prunes from Chinese Turkestan. These numbers include prunes, large and quite resistant to drought and alkali, drought resistant plums, and especially No. 30356, "A plum called 'Alutcha'. A very remarkable sort of plum, fruits being medium large, of golden yellow color, clingstone, of fine flavor. Ripening early, in the latter part of July, but CAN BE KEPT FOR A FEW MONTHS. Are excellent material for preserves and jellies. Apparently a very rare and probably new variety of Central Asian plum. Obtained from the garden of the Hon. George Macartney, British Consul at Kashgar." (Meyer's introductions.) For distribution later.

PRUNUS TOMENTOSA. (Amygdalaceae.) 30316-318, 30362-363. Cuttings of plum-cherries from Chinese Turkestan. "A small bush fruit, size of fruits like that of large garden peas. Very early. Stands drought and alkali quite well. Of possible value in hybridization experiments. In Chinese Turkestan this fruit is propagated by division, but in northern China it is budded on Amygdalus davidiana, as it grows much faster and stands drought and transplanting much better than on its own roots." (Meyer's introductions.) For distribution later.

PUNICA GRANATUM. (Punicaceae.) 30354. Cuttings of pomegranate from Karawag, Chinese Turkestan. "A pomegranate called 'Atchiek.' Fruits very large, often the size of a child's head. Color, bright red, of sour taste. A very ornamental fruit, excellent for display in windows of fruit stores. Can be kept and shipped with great facility." (Meyer's introduction.) For distribution later.

PYRUS SPP. (Malaceae.) 30308, 30329, 30351-352, 30360-361. Cuttings of pears from Chinese Turkestan. Among them are some of excellent keeping and shipping qualities, others standing extremes of temperature well, and some to be tested under irrigation. (Meyer's introductions.) For distribution later.

ROSA SPP. (Rosaceae.) 30254-263. Seeds of roses from Albano, Stockholm, Sweden. Presented by Dr. Weit Wittrock, Director, Botanic Gardens. Ten roses, mostly species native to the temperate and alpine regions of Europe and North America. For distribution later.

SAGITTARIA SPP. (Alismaceae.) 30421, 30423. Bulbils from Canton, China. Presented by Mr. G. Weidman Groff, Canton Christian College. 30421. "Chi koo. In propagating the 'chi koo' the Chinese plant the bulb which develops into a strong plant about one foot high. This they plant in the first or second month. In about three or four months the plant develops underground rootstalks which are separated from the mother stalk and planted in rows about two feet apart. The preparation of the soil is much like that of rice, the plants standing in water. A sandy or loamy soil is desirable. The Chinese are very fond of the tubers, which they boil with beef or pork." (Groff.) 30423. From Kwai Lam, Kwong Sai. "Ma tai. This is grown in much the same way as the preceding. They are very good boiled with

meat. The Chinese eat them raw too. Kwai Lam, the capital of Kwong Sai is famous for a variety of Ma tai, and these come from that country." (Groff.) For distribution later.

SALIX SPP. (Salicaceae.) 30144-146, 30151. Cuttings of willows from Chinese Turkestan. Three of these are recommended for windbreaks and ornamental trees in the irrigated regions, while another, found at an elevation of 6000 feet, is recommended for the northern sections of the country. (Meyer's introductions.) For distribution later.

STRYCHNOS SP. (Loganiaceae.) 30366. Seeds of an edible strychnos from Amani, German East Africa. Presented by the Director of the Biologisch-Landwirtschaftliche Institute. Introduced for trial compared with the other edible fruited species of the genus, some of which will probably prove excellent shippers. For distribution later.

THAUMATOCOCCUS DANIELLI. (Marantaceae.) 30215. Seeds from Aburi, Gold Coast, West Africa. Presented by Mr. A. R. Gould, curator, Botanic Gardens, through Mr. W. T. D. Tuahope, Director of Agriculture. "Said to be a very common plant on the Ivory Coast in virgin forests and on the sites of old plantations established in the forests. The white part of the arilla is extremely sweet, with a taste of licorice or saccharin. The gelatin (or mucilage) which surrounds the seed, swells up in water and forms a great mass of gelatin with the black seed in the middle, which gives it the appearance of frog eggs." (Journal de Botanique.) "No use is made of the seeds in this Colony, but the leaves are extensively used in packing fresh Kola nuts to prevent them from drying." (Tuahope.) For distribution later.

TRIFOLIUM SPP. (Fabaceae.) 30100-102, 30109. Seeds of clovers from Haifa, Palestine. Presented by Mr. Aaron Aaronsohn, Director, Jewish Agricultural Experiment Station. 30100. Trifolium pilulare. 30101. Trifolium scabrum. 30102. Trifolium spumosum. 30109. Trifolium lappaceum. All introduced for the work of the Office of Forage Crop Investigations. For distribution later.

ULMUS SPP. (Ulmaceae.) 30152, 30364. Cuttings of elms from Kashgar, Chinese Turkestan. Both are shade trees, one the variety umbraculifera, with a dense head of foliage, and standing drought and a fair amount of alkali, the other a flat headed spreading tree. (Meyer's introductions.) For distribution later.

NOTES FROM FOREIGN CORRESPONDENTS.

ARABIA. Maskat. Mr. John A. Ray, American Consul, writes March 7, that he has supplied "a missionary now traveling in the interior, visiting places where no Occidental has been for years" with mailing tins and expects a report from him that will interest us.

CANARY ISLANDS. Teneriffe. Puerto Orotava. Mr. George V. Perez writes March 20, "Statice arborea has a very vigorous growth. Although it has not been used as a forage plant, the avidity with which goats eat it and the resistance to salt in the soil would make it worth your while to make experiments with it. The last home of this plant was for many years two large maritime rocks entirely surrounded by the sea. From these rocks the plant disappeared owing to goats having been placed there to find their food some twenty five years ago, and it was supposed to be lost to botany till I had it rediscovered by a goatherd in some precipitous rocks in this island in 1906. Some years ago I made some experiments to show the great resistance of our Statice macrophylla to sea water by soaking the seed in it for a fortnight, then sowing and irrigating with only sea water. The seed germinated under these unfavorable conditions and it took six months to destroy the last seedling plant."

COSTA RICA. San José. Professor C. Wercklé writes March 30 and April 2 that he will try to get us "the best varieties of anona and also of the palta or avocado; of the latter some admirable varieties are to be found only in the hot Pacific coast region. As I will go to the Coyolar soon I will get some there. The seeds of Persea pittieri (P. frigida Linden) have shriveled so much in a few days that I had to plant them here; will send you young trees in a few months. The seed cannot be kept dry. Have just received a sample of bark of Escallonia poosana J. Don. Smith, which is the giant of the genus; (very tall, narrow trees, when old, up to 1.50 m. diameter of trunk. After it is dry I shall send it to you to find out if it is as rich in tannin as some Colombian species. The tree forms by itself dense forests on the upper limit of tree-growth on the volcano Turialba. We will try to get this year the Guadua angustifolia H. B. K., from Guadua, Cundinamarca; it is much more useful than the Asiatic species. We have some plants of the Sapium from the Rio Meta, which is the only species still more valuable than S. tolimense, but it is a warm species, (500 m. altitude), very productive and of extra good quality. I have just received a

sample of the 'gomma-gutta', which I will send to you, but please take into consideration that it is very unclean. Besides they left it to dry in the bottle, in which they have put a cork of burio, Heliocarpus-wood. Try it, mixed 1:2 or so with Prussian blue; it makes thus the best, most beautiful and lasting green. When the resin gets dry, it is brown, but a solution of it always gives the characteristic light-yellow color. The 'gomma-gutta' comes from the East Indies, from Garcinia morella; here the tree which produces it (a Calophyllum, or Rheedia) is very abundant on the Pacific Coast."

INDIA. United Provinces. Saharanpur. Mr. A. C. Hartless, Superintendent of the Government Botanical Gardens, writes March 13 that Mr. Woglum, of the Bureau of Entomology, is to return to Saharanpur in April to stay for two or three months, in case we wish to further utilize his services while there.

NATAL. Durban. Mr. J. Medley Wood, Director, Natal Botanical Gardens, writes March 11 that they can supply us with seeds of Strychnos quaqua, which will be sent as soon as ready. Diospyros mespiliformis and Garcinia livingstonei, which we requested for use as stocks, he is unable to furnish at present, but he will try to get them if at all possible. The seeds of native species of Asparagus will be sent when obtained, and a list of the bamboos which have proven hardy in the gardens there.

PALESTINE. Haifa. Mr. A. Aaronsohn, Director of the Jewish Agricultural Experiment Station, writes April 4 in regard to Cyperus papyrus, that at present the marshes where it occurs are completely submerged, that by the time the waters have subsided growth will have commenced, and that he will therefore wait until August or September when the Arabs will have burned over the swamps, in order to secure us the quantity of the rhizomes we wish.

PARAGUAY. Cahi Puente. Mr. C. F. Mead writes March 28 that he will probably be able to continue his work in Paraguay in our interests for another five years, as he expects to make arrangements shortly to take charge of the bridge work on a new line which will probably run from Capilla Borja, 26° S., and 56° 30' W., northeast about 100 kilometres, thence almost due east to Puerto San Francisco in Brazil. The line will cross the Alta Parana very near to the Falls of Salto Iguazu, and will probably take five years to complete.

PERSIA. Urumia. Mr. Hugo A. Müller writes March 3, that he will observe the grapes, fruits and nuts grown there and will send us anything that may seem of interest to us.

QUEENSLAND. Brisbane. Dr. F. Manson Bailey, Colonial Botanist, under date March 1 identifies the plants mentioned by Dr. Alexander Graham Bell in his letter quoted in Plant Immigrant Bulletin Number 49, as the "finger cherry", Rhodomyrtus macrocarpa, the poisonous effects of which are probably caused by a fungus (Glaeosporium periculosum) which attacks the fruit. He will undertake to get seeds of this for us. The trees bearing large pods were evidently the "Moreton Bay Chestnut" or "Bean tree" (Castanospermum australe), of which he is sending seed. He will endeavor to get us seed of Garcinia mestoni, a true mangosteen of semi-tropical Australia.

STRAITS SETTLEMENTS. Singapore. Dr. H. N. Ridley writes February 20 that he will be able to get for us later Mangifera lagenifera, or "lanjoot", M. odorata or "kwini", M. caesia, M. foetida, and the ordinary M. indica. Also two species of Bouea. And he will try again to get fertile seeds of Gonocitrus, of which he thinks the natives gather the fruits unripe.

SPECIAL NOTES.

On April 22, Mr. W. A. Orton, Physiologist in charge of Truck-disease and Sugar Investigations, sails for a six months investigation of truck crops and their diseases in Europe. He will spend May to July in the sugar beet and potato districts of Germany and Austria, studying the sugar beet industry, and looking into the diseases of truck crops, especially potatoes. In August he will go to England, thence in September to Paris to attend the fourth International Congress of Genetics, thence returning to the districts first studied in Germany and Austria.

On May 12 Mr. L. H. Dewey, botanist in charge of fiber plant investigations, leaves for Java via Europe to attend the Congress and Exhibition in connection with the cultivation and preparation of fibers. He will reach the island June 30, remain there studying fiber crops until July 15, and return by way of Hongkong and Yokohama. He expects to bring back with him from Buitenzorg one or more wardian cases of desirable plants which it has been found difficult to import in the form of seeds or cuttings.

A SINGLE COMPARATIVE TEST OF HOME-GROWN VERSUS IMPORTED BULBS ON THE DEPARTMENT GROUNDS, WASHINGTON, D. C., SPRING OF 1911.

The rows to the right which show the numbers 50 on the labels, were grown at the United States Bulb Farm, at Bellingham, Washington. These flowered seven days earlier than the Holland grown bulbs, unnumbered, on the left.

One-row tests of fifty bulbs each of seven varieties, and a check row of fifty imported bulbs in the same seven varieties, were planted. In every case the home-grown bulbs flowered from seven to ten days earlier than the imported bulbs.